WHAT IS CLAIMED IS:

1. A plate-making method of a lithographic printing plate, which comprises exposing imagewise a photosensitive lithographic printing plate and developing the exposed photosensitive lithographic printing plate with a developing solution, wherein the photosensitive lithographic printing plate comprises an aluminum support and a photosensitive layer comprising a photosensitive composition of photopolymerization type, the composition containing: a compound having a nitrogen atom and an ethylenically unsaturated double bond; a photopolymerization initiator; and a polymer binder; and the developing solution contains (1) an inorganic alkali agent and (2) a nonionic surface active agent having a polyoxyalkylene ether group.

2. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the developing solution has a pH in a range of from 9 to 13.5 and an electric conductivity in a range of from 2 to 40 mS/cm.

3. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the nonionic surface active agent having a polyoxyalkylene ether group is a compound represented by the following formula (I):

$$R^1\text{-}O\text{-}(R^2\text{-}O)_n\,H \qquad (I)$$

wherein, R^1 represents an alkyl group having from 3 to 15 carbon atoms which may be substituted, an aromatic hydrocarbon group having from 6 to 15 carbon atoms which may be substituted or an aromatic heterocyclic group having from 4 to 15 carbon atoms which may be substituted, wherein the substituent includes an alkyl group having from 1 to 20 carbon atoms, a halogen atom such as bromine, chlorine or iodine, an aromatic hydrocarbon group having from 6 to 15 carbon atoms, an aralkyl group having from 7 to 17 carbon atoms, an alkoxy group having from 1 to 20 carbon atoms, an alkoxycarbonyl group having from 2 to 20 carbon atoms and an acyl group having from 2 to 15 carbon atoms; R^2 represents an alkylene group having from 1 to 100 carbon atoms which may be substituted, wherein the substituent includes an alkyl group having from 1 to 20 carbon atoms and an aromatic hydrocarbon group having from 6 to 15 carbon atoms; and n represents an integer of from 1 to 100.

4. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein a content of the nonionic surface active agent having a polyoxyalkylene ether group is from 1 to 30% by weight in the developing solution.

5. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the compound

having a nitrogen atom and an ethylenically unsaturated double bond is a urethane series addition-polymerizable compound prepared by utilizing an addition reaction of an isocyanate with a hydroxy group.

6. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the compound having a nitrogen atom and an ethylenically unsaturated double bond is a vinyl urethane compound having at least two polymerizable vinyl groups in the molecule thereof obtained by subjecting addition of a vinyl monomer having a hydroxy group represented by formula (II) shown below with a polyisocyanate compound having at least two isocyanato groups in the molecule thereof:

$$CH_2=C(R)COOCH_2CH(R')OH \qquad (II)$$

wherein R and R', which may be the same or different, each represents a hydrogen atom or a methyl group.

7. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the compound having a nitrogen atom and an ethylenically unsaturated double bond is an amide of an unsaturated carboxylic acid with an aliphatic polyamine compound.

8. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the compound having a nitrogen atom and an ethylenically unsaturated

double bond is an ester of an unsaturated carboxylic acid with an aliphatic polyhydric alcohol compound.

9. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein an amount of the compound having a nitrogen atom and an ethylenically unsaturated double bond is from 5 to 80% by weight of the whole composition of the photosensitive layer.

10. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the photopolymerization initiator comprises a titanocene compound.

11. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein an amount of the photopolymerization initiator is from 0.05 to 100 parts by weight per 100 parts by weight of the compound having a nitrogen atom and an ethylenically unsaturated double bond.

12. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the polymer binder is an organic polymer soluble or swellable in an aqueous alkali solution.

13. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the polymer binder is an addition polymer having a carboxylic acid group in the side chain.

14. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the polymer binder is a cellulose derivative having a carboxylic acid group in the side chain.

15. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the polymer binder has a weight average molecular weight of from 5,000 to 300,000 and an acid value of from 20 to 200.

16. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein an amount of the polymer binder is from 10 to 90% by weight of the whole composition of the photosensitive layer.

17. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the photosensitive layer further comprises a surface active agent.

18. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the photosensitive layer further comprises a coloring agent.

19. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the aluminum support comprises an aluminum or aluminum alloy plate the surface of which is subjected to graining treatment and anodizing treatment.

20. The plate-making method of a lithographic printing plate as claimed in Claim 1, wherein the developing solution has a pH in a range of from 10.0 to 12.5 and an electric conductivity in a range of from 5 to 20 mS/cm.